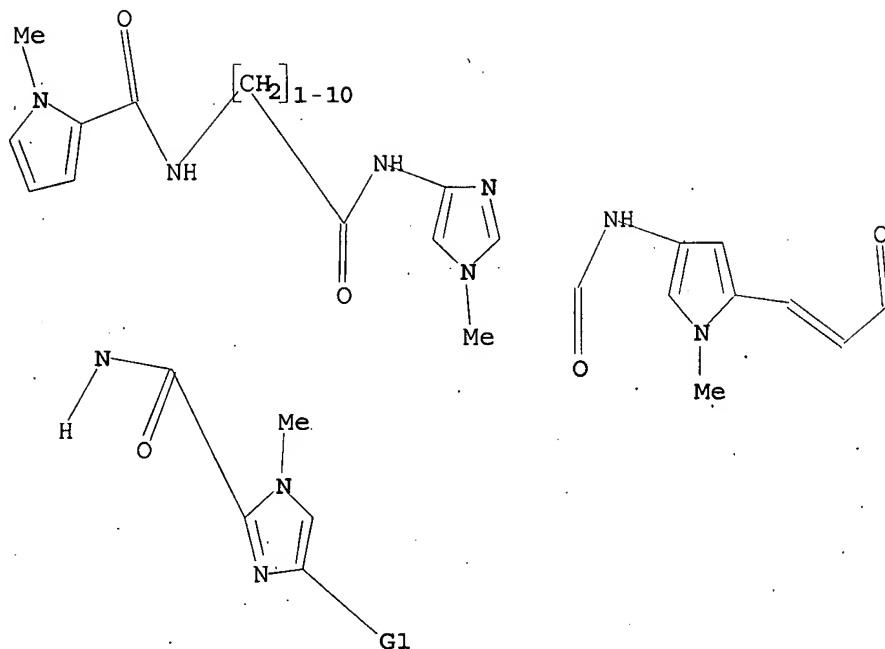


Chemical structure of a branched poly(amide-imine) polymer, labeled G1. The structure features a central amide linkage connecting three different side chains. The left side chain is a 2-methyl-4-(2-oxo-2-(2-methyl-1H-imidazol-4-yl)ethyl)pyrrole-1-carboxamide group. The middle side chain is a 2-methyl-4-(2-oxo-2-(2-methyl-1H-imidazol-4-yl)ethyl)pyrrole-1-carboxamide group. The right side chain is a 2-methyl-4-(2-oxo-2-(2-methyl-1H-imidazol-4-yl)ethyl)pyrrole-1-carboxamide group. The polymer is labeled G1 at the bottom.

Structure attributes must be viewed using STN Express query preparation.

Page 1



G1 H, Ak, N

Structure attributes must be viewed using STN Express query preparation.

=> d his

(FILE 'HOME' ENTERED AT 15:36:39 ON 24 JUL 2007)

FILE 'REGISTRY' ENTERED AT 15:37:11 ON 24 JUL 2007

L1	STRUCTURE UPLOADED
L2	QUE L1
L3	1 S IMIDAZOLE/CN
L4	1 S PYRROLE/CN
L5	132949 S 16.195/RID AND 16.136/RID
L6	STRUCTURE UPLOADED
L7	QUE L6
L8	0 S L6
L9	20 S L6 FUL
L10	20 S L9 AND CAPLUS/LC
L11	0 S L9 AND CAOLD/LC

FILE 'ZCAPLUS' ENTERED AT 15:43:19 ON 24 JUL 2007

L12 8 S L9

SS
7/24/07

L12 ANSWER 8 OF 8 ZCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:840303 ZCAPLUS <<LOGINID::20070724>>

DOCUMENT NUMBER: 138:132742

TITLE: Molecular design of a pyrrole - imidazole hairpin polyamides for effective DNA alkylation

AUTHOR(S): Bando, Toshikazu; Narita, Akihiko; Saito, Isao; Sugiyama, Hiroshi

CORPORATE SOURCE: Division of Biofunctional Molecules Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, 101-0062, Japan

SOURCE: Chemistry--A European Journal (2002), 8(20), 4781-4790
CODEN: CEUJED; ISSN: 0947-6539

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 138:132742

AB New hairpin polyamide-CPI (CPI = cyclopropylpyrroloindole) conjugates, compds. 12-14, were synthesized and their DNA-alkylating activities compared with the previously prepared hairpin polyamide, compound 1, by high-resolution denaturing gel electrophoresis with 450 base pair (bp) DNA fragments and by HPLC product anal. of the synthetic decanucleotide. In accord with our previous results, alkylation by compound 1 occurred predominantly at the G moiety of the sequence 5'-AGTCAG-3' (site 3). However, compound 12, in which the structure of the alkylating moiety of compound 1 is replaced with segment A of duocarmycin A DU-86 (CPI), did not show any DNA alkylating activity. In clear contrast, the hairpin CPI conjugate 13, which differs from compound 1 in that it lacks one Py unit and possesses a vinyl linker, alkylated the A of 5'-AGTCAG-3' (site 3) efficiently at nanomolar concns. Alkylation by compound 14, which has a vinyl linker, occurred at the A of 5'-AGTCCA-3' (site 6) and at several minor alkylation sites, including mismatch alkylation at A of 5'-TCACAA-3' (site 2). The significantly different reactivity of the alkylating hairpin polyamides 1, 12, 13, and 14 was further confirmed by HPLC product anal. by using a synthetic decanucleotide. The results suggest that hairpin polyamide-CPI conjugate 13 alkylates effectively according to Dervan's pairing rule, and with a new mode of recognition in which the Im-vinyl linker (L) pair targets G-C base pairs. These results demonstrate that incorporation of the vinyl-linker pairing with Im dramatically improves the reactivity of hairpin polyamide-CPI conjugates.

IT 491647-63-3P 491647-64-4P

RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(vinyl-linker pairing with imidazole in pyrrole - imidazole hairpin can improve polyamides for effective DNA alkylation)

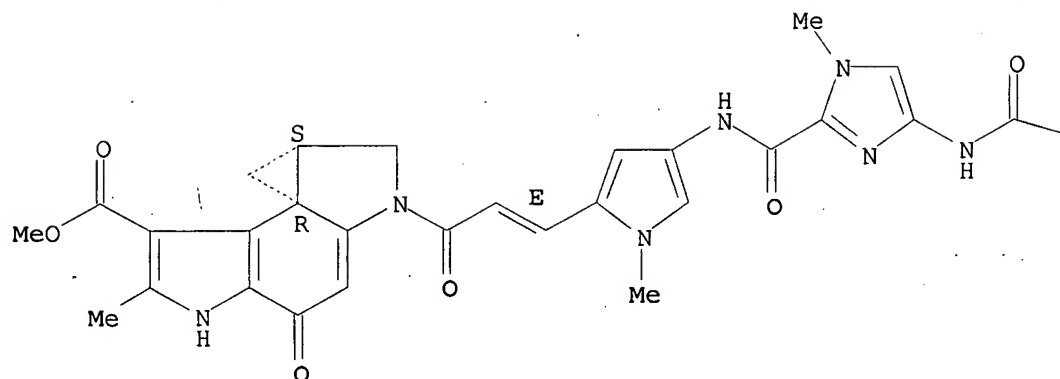
RN 491647-63-3 ZCAPLUS

CN Cyclopropa[c]pyrrolo[3,2-e]indole-7-carboxylic acid, 2-[(2E)-3-[4-[[[4-[[4-[[[4-[[[4-[[[4-((acetylamino)-1-methyl-1H-imidazol-2-yl]carbonyl]amino)-1-methyl-1H-pyrrol-2-yl]carbonyl]amino)-1-methyl-1H-pyrrol-2-yl]carbonyl]amino)-1-oxobutyl]amino)-1-methyl-1H-imidazol-2-yl]carbonyl]amino)-1-methyl-1H-pyrrol-2-yl]-1-oxo-2-propenyl]-1,2,4,5,8,8a-hexahydro-6-methyl-4-oxo-, methyl ester, (7bR,8aS)- (9CI) (CA INDEX NAME)

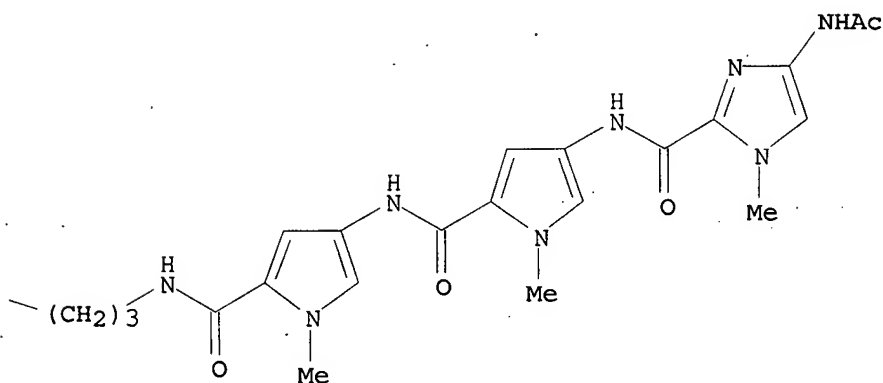
Absolute stereochemistry.

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

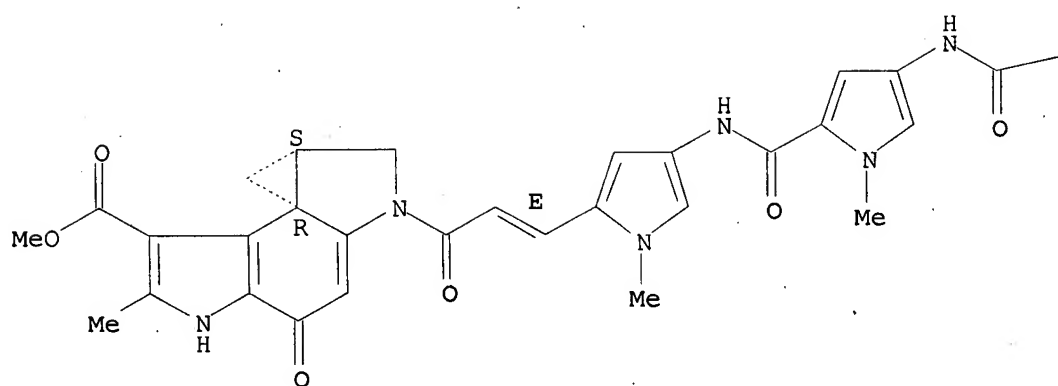


RN 491647-64-4 ZCAPLUS

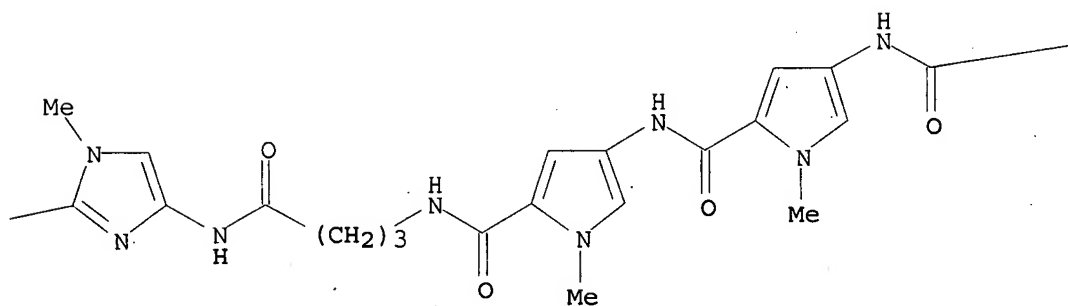
CN Cyclopropa [c]pyrrolo[3,2-e]indole-7-carboxylic acid, 2-[[[2E]-3-[4-[[[4-[[[4-[[4-[[[4-[[[4-(acetylamino)-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-oxobutyl]amino]-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]-1-oxo-2-propenyl]-1,2,4,5,8,8a-hexahydro-6-methyl-4-oxo-, methyl ester, (7bR,8aS)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

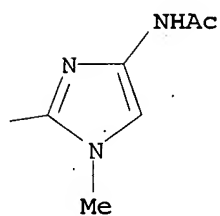
PAGE 1-A



PAGE 1-B



PAGE 1-C



IT 491647-57-5P 491647-58-6P 491647-59-7P
491647-60-0P 491647-61-1P 491647-62-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

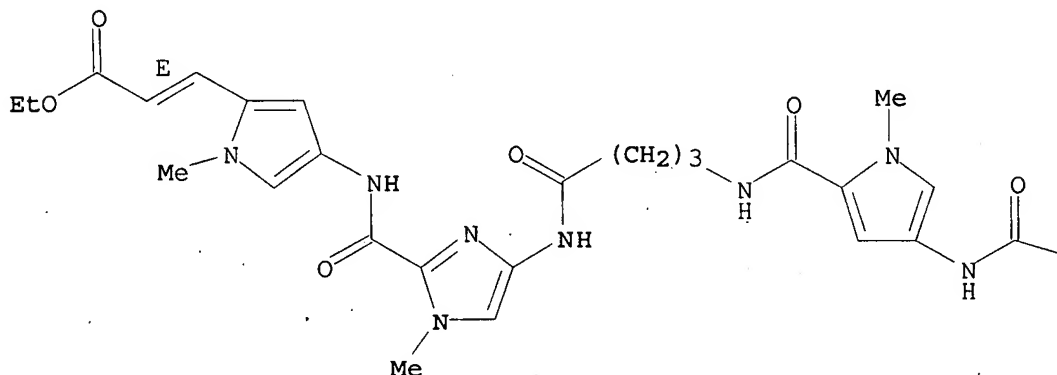
(vinyl-linker pairing with imidazole in pyrrole - imidazole hairpin can improve polyamides for effective DNA alkylation)

RN 491647-57-5 ZCAPLUS

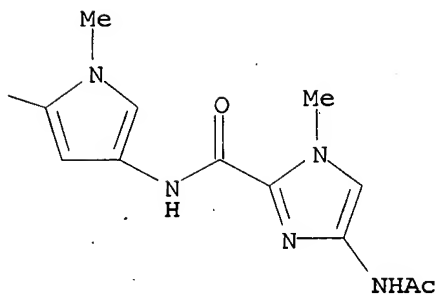
CN 2-Propenoic acid, 3-[4-[[[4-[[[4-[[[4-[[[4-(acetylamino)-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-oxobutyl]amino]-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]-, ethyl ester, (2E) - (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

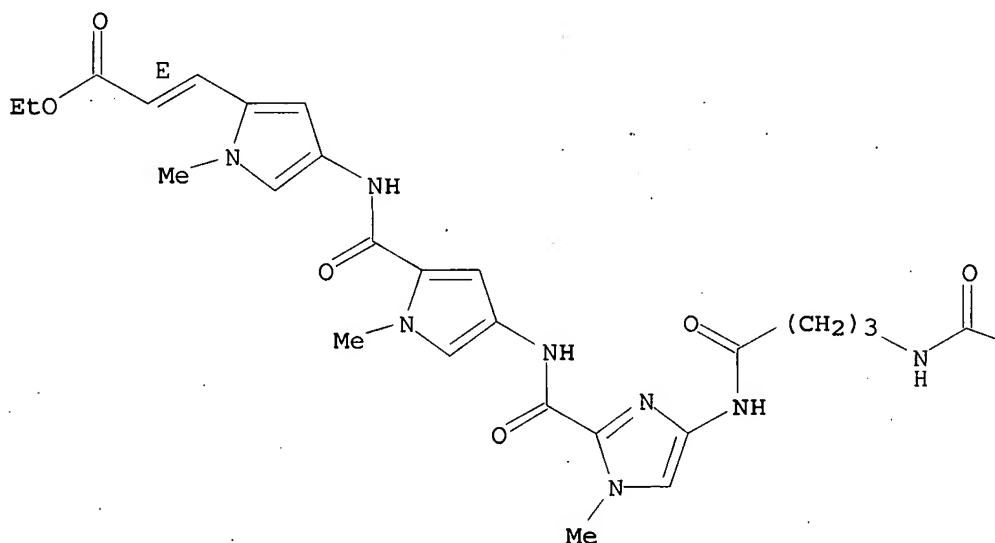


RN 491647-58-6 ZCAPLUS

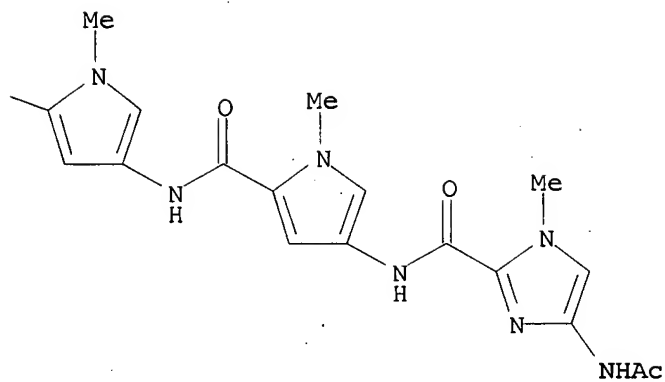
CN 2-Propenoic acid, 3-[4-[[[4-[[[4-[[[4-[[[4-[[[4-(acetylamino)-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-oxobutyl]amino]-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]-, ethyl ester, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

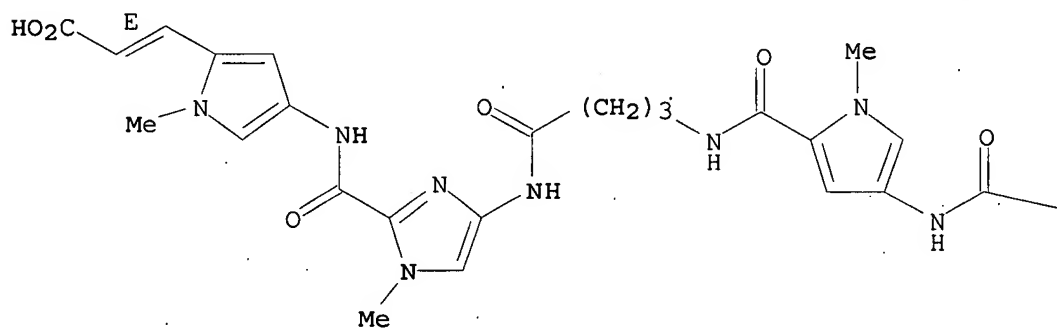


RN 491647-59-7 ZCAPLUS

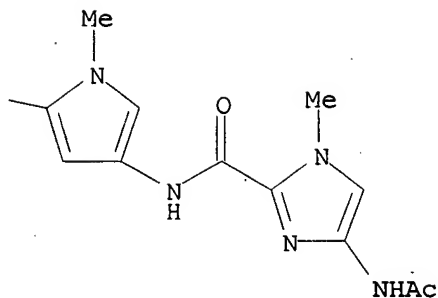
CN 2-Propenoic acid, 3-[4-[[[4-[[[4-[[[4-[[[4-(acetylamino)-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-oxobutyl]amino]-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown:

PAGE 1-A



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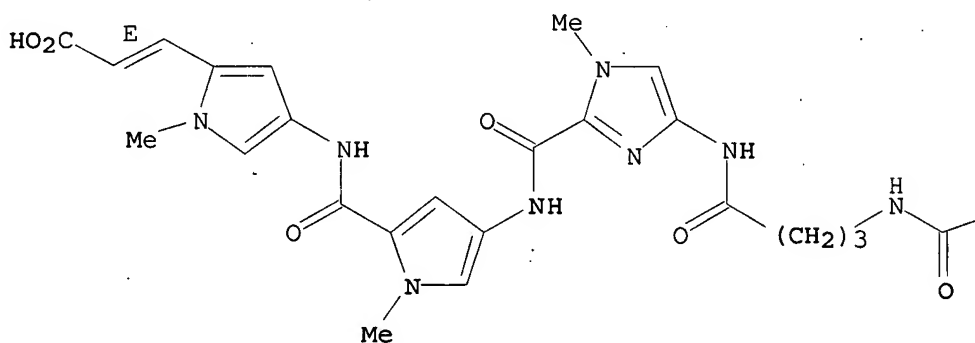


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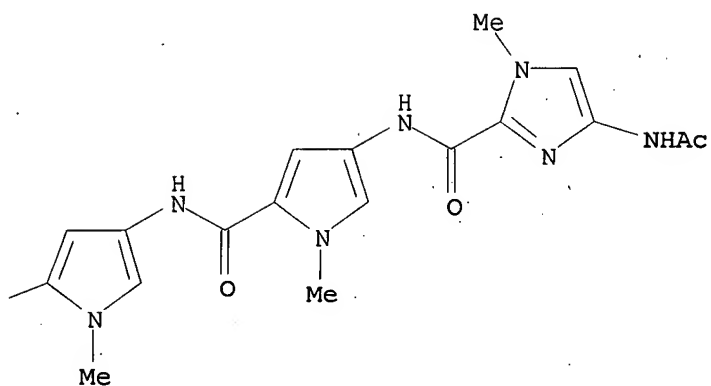
CN 2-Propenoic acid, 3-[4-[[[4-[[[4-[[[4-[[[4-[[[4-(acetylamino)-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-oxobutyl]amino]-1-methyl-1H-imidazol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]carbonyl]amino]-1-methyl-1H-pyrrol-2-yl]-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

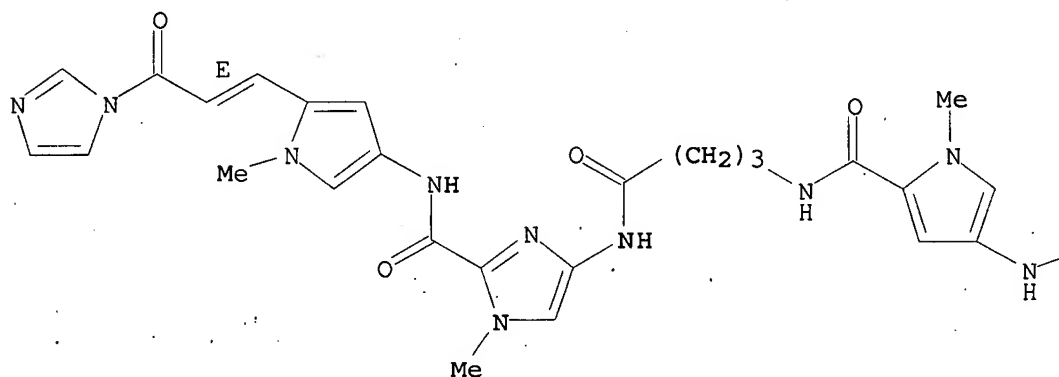


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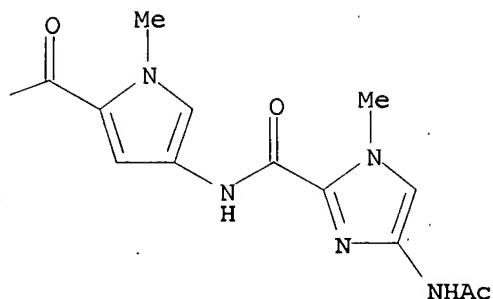
CN 1H-Imidazole-2-carboxamide, 4-(acetylamino)-N-[5-[[[5-[[[4-[[2-[[[5-[(1E)-3-(1H-imidazol-1-yl)-3-oxo-1-propenyl]-1-methyl-1H-pyrrol-3-yl]amino]carbonyl]-1-methyl-1H-imidazol-4-yl]amino]-4-oxobutyl]amino]carbonyl]-1-methyl-1H-pyrrol-3-yl]amino]carbonyl]-1-methyl-1H-pyrrol-3-yl]-1-methyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

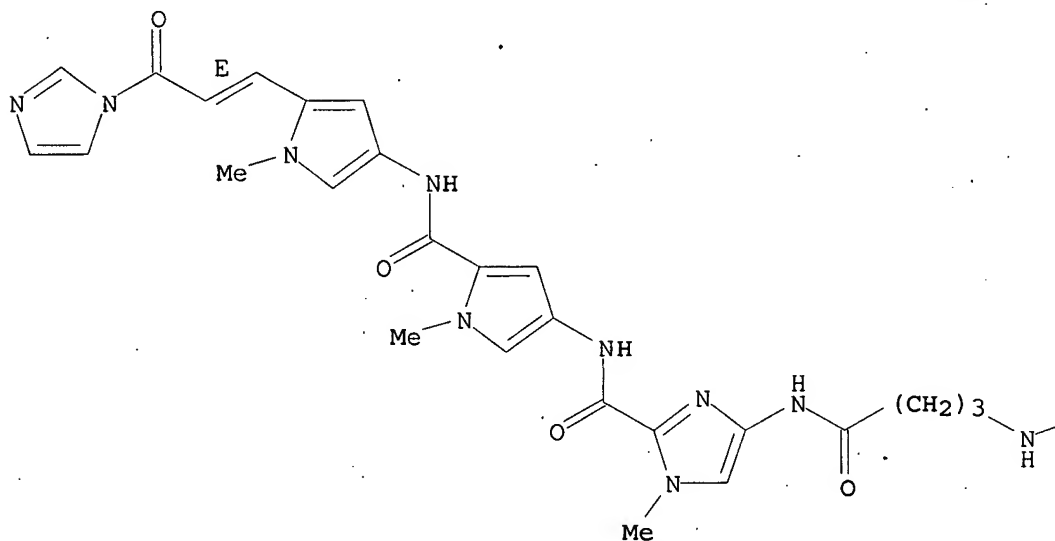


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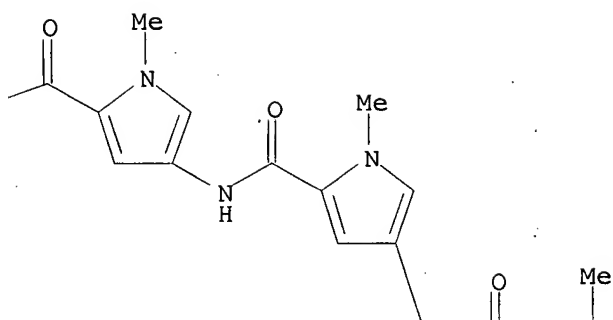
CN 1H-Imidazole-2-carboxamide, 4-(acetylamino)-N-[5-[[[5-[[[4-[[2-[[[5-[[[5-[(1E)-3-(1H-imidazol-1-yl)-3-oxo-1-propenyl]-1-methyl-1H-pyrrol-3-yl]amino]carbonyl]-1-methyl-1H-pyrrol-3-yl]amino]carbonyl]-1-methyl-1H-imidazol-4-yl]amino]-4-oxobutyl]amino]carbonyl]-1-methyl-1H-pyrrol-3-yl]amino]carbonyl]-1-methyl-1H-pyrrol-3-yl]-1-methyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

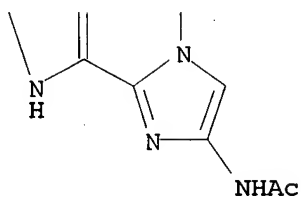
PAGE 1-A



PAGE 1-B



PAGE 2-B



REFERENCE COUNT:

35

THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT